

AMENDMENTS TO THE CLAIMS

Please amend the claims of the present application without prejudice
or disclaimer as set forth below:

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1. (currently amended) A storage area network (SAN) comprising:
a network interconnection system;

at least one machine selected from ~~the group consisting of a group~~
comprised of a host and an appliance, the machine coupled to the network

- 10 Interconnection system;

at least one storage system coupled to the network interconnection
system;

a network management system;

wherein the network management system further comprises:

- 15 at least one management client; and

at least one integrated management agent running on a machine of
the at least one machine; and

wherein the integrated management agent comprises an object
manager configured such that the integrated management agent is

- 20 expandable to support ~~an~~ additional network device types by installing
device type-specific modules while the integrated management agent is
running.

2. (original) The storage area network of Claim 1, wherein the integrated management agent further comprises a consistent user interface module, and wherein the consistent user interface module supports a web-based and a Windows-based user interface.

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3. (currently amended) The storage area network of Claim 1, wherein the integrated management agent further comprises ~~and a~~ consistent user interface module coupled to the object manager, wherein at least one device type-specific module is installed, and wherein the at least one device type-specific module further comprises a device handler for coupling a storage system to the integrated management agent.

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4. (original) The storage area network of Claim 3, wherein at least one device type-specific module further comprises code for supporting a plurality of protocols to communicate with a plurality of devices.

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5. (original) The storage area network of Claim 4, wherein the management system further comprises a distributed error and status handler capable of handling error and status information from at least one device.

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6. (original) The storage area network of Claim 5, wherein at least a first level of the distributed error and status handler executes on the at least one device.

7. (currently amended) The storage area network of Claim 5, wherein the at least one machine selected from ~~a group consisting of the~~ group comprising a host and an appliance; incorporates a second level of error and status handler.

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8. (original) The storage area network of Claim 5, wherein the distributed error and status handler further comprises a centralized global error and status handler level.

10 9. (original) The storage area network of Claim 8, wherein the centralized global error and status handler level executes upon a fault tolerant system in a storage are network management environment.

10. (original) The storage area network of Claim 1, wherein the integrated management agent further comprises a trap handler coupled to a notification module to receive traps from at least one SAN device and send notification to at least one system administrator.

11. (original) The storage area network of Claim 10, wherein the integrated management agent further capable of sending traps to support at least a second management system.

12. (original) The storage area network of Claim 1, wherein the integrated management system is capable of being configured with a configuration utility.

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13. (original) The storage area network of Claim 1, wherein the object manager further comprises a dynamic list indicating device types the integrated management agent is capable of handling, wherein installing
5 device type-specific modules causes addition of device types to the dynamic list, and wherein addition of device types to the dynamic list does not require shutting down the integrated management agent.

14. (original) The storage area network of Claim 13, wherein the
10 network interconnection system further comprises at least one fibre channel switch, and wherein a device type-specific module is type specific to the at least one fibre channel switch.

15. (original) The storage area network of Claim 1, wherein the
15 integrated management system further comprises a firmware download module with unified user interface hiding device specific firmware download process and characteristics from the administrator.

16. (currently amended) The storage area network of Claim 1,
wherein the integrated management agent is capable of discovering devices
and agents in the SAN and their interconnection by applying a conglomerate
method comprising at least two elements selected from the group ~~consisting~~
5 of comprising host and device agent broadcasting, multicasting device
identity, collecting addresses from network traffic, collecting information from
a name server, scanning a set of ranges of address supplied in configuration
information, and collecting information about devices from configuration
information.

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17. (currently amended) The storage area network of Claim 1,
wherein the integrated management agent is further capable of discovering
devices and agents in the SAN and their interconnection by applying a
conglomerate method comprising at least three elements selected from the
15 ~~group consisting of~~ comprising host and device agent broadcasting,
multicasting device identity, collecting addresses from network traffic,
collecting information from a name server, scanning a set of ranges of
address supplied in configuration information, and collecting information
about devices from configuration information.

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18. (new) A system comprising:

an integrated management agent capable of managing components of a storage area network (SAN), the integrated management agent comprising a device agent;

5 the device agent comprising an object-based device handler sublayer and a protocol-dependent device handler sublayer, the protocol-dependent device handler sublayer comprising multiple modules, each respective module of the multiple modules adapted to support a respective device-type-specific protocol; and

10 wherein a particular module of the multiple modules that is adapted to support a particular device-type-specific protocol may be installed to or uninstalled from the protocol-dependent device handler sublayer independently of other modules of the multiple modules while the integrated management agent is running.

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19. (new) The system of Claim 18, wherein the integrated management agent further comprises an object manager that represents the components of the SAN as objects, and wherein the object-based device handler sublayer provides an interface between the object manager and the protocol-dependent device handler sublayer to permit an object level

20 interface to the devices.

20. (new) The system of Claim 18, wherein the integrated management agent further comprises a dynamic list of device-type-specific protocols that it is capable of using, wherein each device-type-specific protocol is associated with a list of objects and methods, and wherein a
- 5 given list of objects and methods is added to the dynamic list when a given module of the multiple modules supporting a given device-type-specific protocol is installed to the protocol-dependent device handler sublayer.
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